CLAIMS

What is claimed is:

1. A video surveillance system comprising:

at least two video cameras each configured to independently generate video data; and

a video controller coupled with the video cameras, wherein the video controller is configured to substantially synchronize and then merge the video data generated by each of the video cameras to form a single contiguous stream of common video data,

the single contiguous stream of common video data storable in a data file.

2. The video surveillance system of claim 1, wherein the video controller is configured to direct the video cameras to independently generate video data that is generated substantially in phase with a phase relationship that remains constant.

3. The video surveillance system of claim 1, further comprising a camera clock configured to generate a common clock signal, wherein the video cameras are enabled to generate video data with the same common clock signal.

4. The video surveillance system of claim 1, wherein the single contiguous stream of common video data is storable by the video controller in a continuous loop such that the oldest video data is overwritten by the newest video data.

5. The video surveillance system of claim 1, wherein the single contiguous stream of common video data comprises a plurality of frames of video data from each of the video cameras that alternate between each of the video cameras on a frame-by-frame basis.

6. The video surveillance system of claim 1, wherein the video controller is configured to interleave frames of video data from each of the video cameras to form the single contiguous stream of common video data.

7. A video surveillance system comprising:

at least two video cameras each configured to independently generate video data; and

a video controller coupled with the video cameras, wherein the video controller is configured to direct substantially synchronized generation of the video data in a constant phase relationship by each of the video cameras,

the video controller further configured to merge the video data generated by each of the video cameras to form a single contiguous stream of common video data,

the single contiguous stream of common video data storable in a data file.

8. The video surveillance system of claim 7, wherein the single contiguous stream of common video data is representative of the video data generated by each of the video cameras.

9. The video surveillance system of claim 7, wherein the video cameras and the video controller are configured to be mounted in a vehicle.

10. The video surveillance system of claim 9, wherein the video controller comprises a shock sensor, the shock sensor configured to detect forces associated with a collision of the vehicle and provide indication to the video controller.

11. The video surveillance system of claim 10, wherein the video controller is configured to continue capturing video data from the first and second cameras for a determined time following indication of a collision by the shock sensor.

12. The video surveillance system of claim 10, wherein the shock sensor comprises a detector and a housing, wherein the detector is disposed within the

housing without contacting the housing, the indication to the video controller is in response to a force that causes contact between the housing and the detector.

13. The video surveillance system of claim 7, wherein the video controller comprises a portable memory device that is detachable from the video controller, the single contiguous stream of common video data storable in the portable memory device as the data file.

14. The video surveillance system of claim 13, wherein the portable memory device is a FLASH memory card.

15. A video surveillance system, the video surveillance system comprising:

a first video camera configured to independently generate a first stream of video data;

a second video camera configured to independently generate a second stream of video;

a sync and frame merge module coupled with the first and second video cameras, wherein the sync and frame merge module is configured to enable generation of the second stream of video data in substantial synchronization with generation of the first stream of video data by establishment of a constant phase relationship between the first and second streams of video data,

the sync and frame merge module also configured to switch between the first and second streams of video data on a frame-by-frame basis to generate a single contiguous stream of common video data;

a video processing module coupled with the sync and frame merge module , wherein the video processing module is configured to compress the single contiguous stream of common video data; and

a microcontroller coupled with the video processing module, wherein the microcontroller is configured to direct storage of the compressed single contiguous stream of common video data.

16. The video surveillance system of claim 15, further comprising a memory device detachably coupled with the microcontroller, wherein the memory device comprises a FLASH memory configured to store the single contiguous stream of common video data.

17. The video surveillance system of claim 15, wherein the microcontroller directs the storage of a predetermined amount of the single contiguous stream of video data in a continuous loop.

18. The video surveillance system of claim 17, wherein the video data comprises a plurality of first video frames generated by the first video camera and a plurality of second video frames generated by the second video camera, wherein the single contiguous stream of video data comprises a portion of the first video frames interleaved between a portion of the second video frames.

19. The video surveillance system of claim 15, further comprising a buffer coupled with the microcontroller and the video processing module, wherein the buffer is configured to temporarily store the single contiguous stream of common video data until the microcontroller directs storage of the single contiguous stream of common video data.

20. The video surveillance system of claim 15, further comprising a power conditioning module coupled with the microcontroller, the power conditioning module configured to indicate low supply voltage conditions to the microcontroller and maintain the supply voltage to the microcontroller above the low supply voltage condition for a determined period of time, the microcontroller configured to perform an orderly shutdown of the video surveillance system in response to indication from the power conditioning module of low supply voltage conditions.

21. The video surveillance system of claim 15, further comprising a shock sensor coupled with the microcontroller, wherein the microcontroller is configured to cease storage of the compressed single contiguous stream of common video data a

determined amount of time after forces above a determined threshold are indicated by the shock sensor.

22. The video surveillance system of claim 15, wherein the constant phase relationship between the first and second streams of video data comprises one of a determined phase offset and in phase.

23. A video surveillance system comprising:

a first video camera configured to independently generate a first stream of video data;

a second video camera configured to independently generate a second stream of video data;

a camera clock coupled with the first video camera, the camera clock configured to provide a common clock signal to the first video camera to enable generation of the first stream of video data; and

a clock hold off circuit coupled with the second video camera and the camera clock, wherein the clock hold off circuit is configured to selectively enable the second video camera with the common clock signal to generate the second stream of video data in substantial synchronization with generation of the first stream of video data.

24. The video surveillance system of claim 23, further comprising a video data merger circuit coupled with the first and second video cameras, the video data merger circuit configured to merge the first and second streams of video data to form a contiguous stream of common video data.

25. The video surveillance system of claim 24, further comprising a video processing module coupled with the video data merger circuit, wherein the video processing module is configured to decode the contiguous stream of common video data into a digital form and compress the digital form of the contiguous stream of common video data to minimize data storage requirements.

26. The video surveillance system of claim 24, further comprising a video processing module coupled with the video data merger circuit, wherein the video processing module is configured to compress the contiguous stream of common video data to minimize data storage requirements.

27. The video surveillance system of claim 23, wherein the first and second video cameras are configured to independently generate the video data in analog form.

28. The video surveillance system of claim 23, wherein the first and second video cameras are configured to generate the video data in digital form.

29. A method of capturing video data from a plurality of video cameras, the method comprising:

providing a first video camera capable of generation of a first stream of video data and a second video camera capable of generation of a second stream of video data;

stopping generation of the second stream of video data until a determined condition is detected in the first stream of video data;

starting generation of the second stream of video data to generate the second stream of video data substantially synchronous with the first stream of video data when the determined condition is detected;

interleaving frames from the first stream of video data with frames from the second stream of video data to form a single contiguous stream of common video data; and

storing the single contiguous stream of common video data in a continuous loop with a determined duration.

30. The method of claim 29, wherein stopping generation of the second stream of video data comprises disabling a common clock signal from the second video camera, wherein the common clock signal also enables the first video camera.

31. The method of claim 29, wherein starting generation of the second stream of video data comprises detecting when timing information in the first stream of video is substantially the same as timing information in the stopped second stream of video data.

32. The method of claim 29, wherein storing the single contiguous stream of common video data comprises storing the single contiguous stream of common video data in a continuous loop of a determined size such that the oldest video data is overwritten by the newest video data.

33. The method of claim 29, further comprising sensing an external event; continuing to store the single contiguous stream of common video data for a determined period of time following the external event; and stopping further storage of the single contiguous stream of common video data upon expiration of the determined period of time.

34. The method of claim 29, further comprising timing for a determined period of time when an external event is sensed and ceasing further storage of the contiguous stream of common video data at the end of the determined time period.

35. The method of claim 29, wherein stopping generation of the second stream of video data comprises monitoring the first stream of video data during a clock holdoff period.